Allergy Abstracts

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From the Allergy Division of
The Jewish Hospital of Brooklyn

Volume 16, Number 6 November, 1951

Asthma and Hay Fever

The Influence of ACTH on the Reactivity of the Bronchial Tree, Skin and Secretory Glands to Specific Antigens, Histamine and Mecholyl in Bronchial Asthma. Grob, D., Schoenrich, E. H., Winkenwerder, W. C., Harvey, A. McG.: Proc. Second Clinical ACTH Conference **1**: 499, Kingsport Press, Kingsport, Tenn., 1951, Blakiston Co.

The vital capacity and the maximal breathing capacity were studied in 5 patients with seasonal bronchial asthma before and after they were placed in an air-conditioned room, and before, during, and after the administration of ACTH. Air conditioning improved pulmonary function considerably and ACTH administration resulted in a slight further improvement. Inhalations of specific pollen, spores, or aerosolized histamine, and injections of histamine or mecholyl in graded doses were given before and during ACTH treatment. The reactivity of the bronchial tree to inhaled specific antigens was diminished by ACTH. This effect was of variable duration. Inhaled aerosolized histamine was less consistently counteracted and in one instance the reaction to histamine was increased during ACTH therapy. The response to intramuscularly administered histamine was not significantly counteracted by ACTH. In 4 of the 5 patients tested, there was slight increase in bronchial reaction to histamine following hormone administration. The bronchial response to injected mecholyl was decreased in 2 cases and increased in 2 others following therapy. The administration of ACTH for from 10 to 17 days in doses sufficient to produce a remission of clinical asthma did not block the bronchial effects of intramuscularly administered histamine or mecholyl. Doses of ACTH of up to 100 mg. per day had no appreciable effect on the histamine skin reaction of nonallergic subjects or on the skin temperature response to interarterially injected d-tubocurarine which is believed to produce its vascular effects as a result of the liberation of histamine-like substances from the tissues.

It is concluded that the action of ACTH in asthma is not mediated through alteration in reactivity to a cholinergic substance. Probably the effect is not directly dependent upon alteration in tissue reactivity to histamine. The author sites the case of a girl who developed asthma when exposed to dog hair, or when given histamine and methacholine intravenously. Extraordinary protection was afforded by ACTH against the dog hair, but the effect of the drugs was not inhibited or modified. K.

Effect of Cortisone Administered Orally in Bronchial Asthma. Friedlaender, S., and Friedlaender, A. S.: J. A. M. A. **146**: 1381, 1951.

Twelve patients who failed to respond to the usual therapeutic procedures, and who were having daily attacks of severe bronchial asthma for a month or more were put on cortisone therapy. The drug was administered orally in average daily doses of 25 or 50 mg. given at 4 to 8 hour intervals. Clinical improvement occurred in 9 of the 12 patients and was apparent as early as 2 hours after the initial dose. In all patients who responded favorably, improvement was noted within 24 hours. A rapid return of the asthmatic state occurred when the drug was discontinued and in some instances when the dosage was reduced. The eosinophile response following oral administration of cortisone was comparable to that observed with parenteral administration. A tendency to fluid retention was noted, but no other severe metabolic or harmful effects were encountered in the relatively short periods during which the drug was administered. F.

Clinical Studies With ACTH in Bronchial Asthma. Shulman, L. E., Harvey, A. McG., Howard, J. E., and Schoenrich, E. H.: Proc. Second Clinical ACTH Conference **1**: 401, Kingsport Press, Kingsport, Tenn., 1951, Blakiston Co.

Fifty-four patients with chronic intractable bronchial asthma were given one or more courses of ACTH or cortisone. Nine were considered to be of the sensitive type and 45 were classed as the intrinsic type. Of 50 patients treated with ACTH for the first time, 40 were completely relieved, 6 greatly improved, and 4 experienced moderate relief. Relief was often noted within 4 hours. Maximal relief was attained in from 1 to 14 days, usually within 5 days. Remissions lasted from 3 days to 10 months, averaging 65 days with the median time being 54 days. When hormone therapy was given 2 or more times, the response to the subsequent courses was as good as with the initial course. As many as 6 courses were given to some patients. The rapidity of the clinical response did not forecast the probable length of the remission. However, a total dose of ACTH of less than 430 mg. seemed to predispose to an early recurrence and it is recommended that 500 to 800 mg. be given over a period of from 10 to 15 days. In a small series of cases the long acting form of ACTH (Adactar) appeared to yield results equal to those attained with ACTH. In 3 cases of status asthmaticus, ACTH appeared to be a lifesaving measure. Maintenance therapy with 50 mg. ACTH or 100 mg. of Adactar twice weekly extended the period of remission only slightly in 2 of 4 cases. It was felt that this method of treatment was not justified in preference to isolated, repeated courses. K.

Adrenocorticotropic Hormone (ACTH): Its Effect in Bronchial Asthma and Ragweed Hay Fever. Randolph, T. G., and Rollins, J. P.: Ann. Allergy **8**: 149, 1950.

Three patients with intractable, perennial bronchial asthma refractory to conventional allergic management were hospitalized and treated with adrenocorticotropic hormone, 25 mg. every 6 hours. Improvement was measured by

vital capacity studies, expiratory rate, chest x-rays, and clinical course. Absolute eosinophile counts of circulating blood were made. Individual food tests with known food allergens were performed prior to hospitalization and during the course or immediately following the administration of ACTH. All 3 patients became asymptomatic within 24 or 48 hours after the beginning of therapy and the improvement lasted from 2 to 4 weeks. These results were duplicated when these patients were similarly treated during subsequent hospitalizations. Following the administration of ACTH, all showed an eosinopenia and an increase in both vital capacity and expiratory rate. During hospitalization and for a variable period following the cessation of ACTH therapy, they were refractory to allergens which had previously produced symptoms. Eight other asthmatics were similarly studied and treated. Most of these showed improvement lasting from 1 to 4 weeks. Three patients with ragweed hay fever were treated with ACTH at the height of the pollen season for a 2- or 3-day period. In 2 cases, symptoms were relieved within one-half hour after the beginning of treatment; these patients remained symptom-free for the remainder of the season. A third patient, who had similar relief, experienced severe bilateral pelvic pain which persisted for a week after the cessation of treatment. Except for fluid retention and pelvic cramps, no other deleterious effects were noted with ACTH therapy given in short courses alternating with long periods of rest. E. W.

Exercise in the Treatment of Asthma. Baker, F.: Arch. Phys. Med. **32**: 30, 1951.

Exercise may be used alone or in conjunction with other measures in the treatment of asthma. The functional anatomy and pathogenesis of the poor posture and incorrect manner of breathing assumed by the asthmatic patient, first only during attacks and later even between attacks, are described and discussed. Relaxation of the tense and contracted muscles of the neck, upper chest, and abdomen is emphasized. Exercises designed to train the patient in the correct manner of breathing and to develop normal power and control of respirations are outlined. Improvement can be followed by measuring chest expansion at the nipple line and by vital capacity studies. The patient eventually learns to abort attacks and thereby tends to overcome his fear of attacks. J. S.

Treatment of Collagen Diseases With Nitrogen Mustards. Treatment of Asthma. Jiminez Diaz, C., Perianes, J., and Merchante, A.: Rev. clin. Espan. **39**: 239, 1951.

Nitrogen mustard was administered intramuscularly in doses of 5 mg. every other day for a total of 2 or 3 times to 8 patients with bronchial asthma of long standing. In 7 cases, the asthma cleared completely after the first injection. A second, and occasionally a third injection, was given in some instances to maintain good results. Three months following the initial treatment 5 patients were still free of asthma. The 2 remaining patients had mild recurrences of asthma. H.

Induced Asthma in Man. Herxheimer, H.: Lancet **1**: 1337, 1951.

Asthmatic attacks were induced in human beings by exposing them by inhalation to various allergens or drugs. The respiratory excursions were graphically recorded on a spirometer so that the pattern of the attacks and the effect of various antiasthmatic medicants could be closely observed. The results showed that both histamine and acetylcholine produced attacks more rapidly

than the common allergens, but that such paroxysms were of much shorter duration than those produced by allergens. It was found that the sensitivity of the bronchial tree to allergens was dependent upon the size of the dose. There was no consistency, however, in the pattern of responses, since similar substances often produced attacks of varying severity in the same individual. The author found that this method of determining sensitivity to specific excitants was more reliable than skin testing. It is suggested that this technique of induced asthmatic attacks be used not only for the evaluation of the relative effectiveness of different antiasthmatic drugs but also as a means of hyposensitization in the treatment of bronchial asthma. R.W.

Pleuro-Pulmonary Perforation, a Rare Complication of Bronchial Asthma. Almansa de Cara, S.: Méd. Klin. **12**: 333, 1949.

Two cases of left pleuro-pulmonary perforations without fever or pleural exudate are reported. In both patients, the spontaneous pneumothorax occurred during an asthmatic attack. The author believes that a local condition of the weakened areas of the lungs is more important in the etiology of the pneumothorax than the mechanical effect of the asthmatic seizure. H.

Anaphylactic Reactions From Local Use of Penicillin: Report of Two Cases. Everett, R.: J. A. M. A. **146**: 1314, 1951.

Two men, 57 and 50 years of age, respectively, had severe reactions following the instillation of penicillin into the maxillary sinuses. The first patient had no personal or family history for allergy. He had had 16 previous antral instillations of penicillin and 14 intramuscular injections of the antibiotic. The reaction consisted of flushing of the face, choking, wheezing, dyspnea, rapid drop in blood pressure and pulse rate, profuse perspiration, and loss of consciousness. He was successfully treated with 25 mg. of Benadryl and 100 mg. of aminophyllin orally, and with caffeine and sodium benzoate intramuscularly. Three months following this episode, another intramuscular injection of penicillin produced a similar reaction. The second patient was an asthmatic who had also received penicillin both intramuscularly and by instillation on previous occasions. Penicillin was instilled into his antrum and within a few seconds the entire skin became red and edematous and intensely pruritic. Severe asthma appeared. Treatment with Pyribenzamine and epinephrine gave prompt relief. F.

Infective Allergy, a Common Factor in Children's Asthma, Especially During Infancy and Early Childhood. Fleusborg, E. W.: Acta Allergologica **3**: 66, 1950.

An analysis of 450 children with bronchial asthma revealed an increasing percentage of cases with positive cutaneous reactions with advancing age. The incidence of positive cutaneous reactions varied from 7 per cent in children 2 years of age or younger to 89 per cent in the age group from 12 to 14 years. On the average, the number of positive cutaneous reactions in the individual asthmatic child also increased with advancing age during childhood. During the first 3 or 4 years of life, there was a large group of asthmatic children without demonstrable positive cutaneous reactions to common allergens. An analysis of the "skin-negative" cases with the "skin-positive" group revealed few differences other than age distribution. A positive family history of allergy was found in the same percentage in both groups. This also held true for blood eosinophiles, except that the highest degrees of eosinophiles were most often found in the skin-negative cases. Twenty-eight per cent of the

children in the skin-positive group had or had had eczema, whereas only 9 per cent of the skin-negative group suffered from eczema. Follow-up of many of these skin-negative cases revealed that more positive cutaneous reactions developed during later years. Treatment of skin-negative cases with vaccines yielded better results than hyposensitization therapy in skin-positive cases. H.

Observations on the Metabolic Changes Resulting From the Administration of ACTH to Patients With Asthma and Allied Conditions. Rose, B., Pare, J. A. P., Pump, K. K., Stanford, R. L., Mackenzie, K. R., and Venning, E. H.: Proc. Second Clinical ACTH Conference **1**: 519, Kingsport Press, Kingsport, Tenn., 1951, Blakiston Co.

Eighteen allergic patients were studied on a metabolic ward. Their urinary excretion of histamine ranged from moderate to marked as compared to normal subjects during a control period. Five nonallergic controls excreted an average of 50 micrograms of histamine per 24 hours. One of these developed a "cold" and the histamine excretion rose to 1000 micrograms per 24 hours, but reverted to the normal value on recovery. In asthmatics, amounts up to 250,000 micrograms (250 mg.) were noted. Histamine excretion usually but not invariably increased following ACTH treatment, decreased as therapy was continued, and remained relatively low in the post-treatment period. Histidinuria increased consistently to levels approximating those found in pregnancy and on cessation of treatment it fell to normal levels. Uric acid excretion also increased following ACTH administration. Older ("Intrinsic") asthmatics, who usually show low excretion of glucocorticoids and 17-ketosteroids, responded to ACTH with an increase of output to normal limits and occasionally even slightly more. The younger asthmatics ("extrinsic") had normal excretion of these hormones in the control period with a moderate to marked rise after ACTH. An initial rise in vitamin C excretion was noted immediately after ACTH administration and was followed by a reduction in output of this vitamin. K.

Oral Procaine Hydrochloride Therapy in Asthma. Shapiro, M.M., aand Sadve, M.: Ann. Allergy **8**: 85, 1950.

A case of intractable bronchial asthma in an 18-year-old girl was successfully treated with oral procaine. Definite sensitivity to procaine was demonstrated in this patient by the development of severe constitutional reactions when the procaine was injected intracutaneously or intravenously. Procaine hydrochloride, administered orally in doses of 12.5 grains 3 or 4 times daily, however, produced marked relief for over a year. No injurious effects were noted from this therapy. E. W.

Dermatology

Nonthrombocytopenic Purpura Caused by Mentholated Cigarettes. Highstein, B., and Zeligman, I.: J. A. M. A. **146**: 816, 1951.

The menthol in medicated cigarettes was found to be the cause of a purpuric rash of 6 months duration in a 36-year-old woman. Hematologic studies were normal except for an increased bleeding time. When the patient discontinued the use of the mentholated cigarettes, the rash faded rapidly. The ingestion of menthol, 3 grains daily for 14 days, caused a reappearance of the purpura which again rapidly cleared when the drug was stopped. A retrial with medicated cigarettes again produced an exacerbation whereas nonmedicated cigarettes were well tolerated. F.

Dermatitis Caused By Japanese Lacquer. Etter, R. L.: U. S. Armed Forces M. J. **2**: 505, 1951.

On outbreak of dermatitis venenata among twelve officers of an infantry division stationed in Japan was traced to contact with a recently lacquered bar in the officers' club. The lesions were typical of poison ivy dermatitis and were limited to the forearms, hands, and face. Patch tests with scrapings of the lacquered wood on a known poison ivy sensitive member of the command resulted in a violent skin reaction. Patch tests made with 10 per cent urushi lacquer yielded similar reactions. Control tests made with scrapings of unlacquered wood were negative. Urushi lacquer is obtained from urushiol, the active principal of Rhus vernicifera which is very similar to Rhus toxicodendron. The active principle of both of these is hydroxyl urushiol. It is emphasized that the Japanese Rhus should not be overlooked as a cause of contact dermatitis resembling poison ivy dermatitis which occurs in American personnel in the Orient. Attention is also called to the fact that urushi lacquer is used in the manufacture of innumerable art and souvenir objects and that all of these are potential sensitizers. C.

The Action of Histamine Antagonists on the Histamine Wheal and the Eczema Test (Patch Test). Nilzen, A.: Acta dermat.-venereol. **30**: 1, 1950.

Intracutaneous and scratch tests were performed with a mixture of a 2 per cent solution of antihistamine and an equal volume of a 1:10,000 dilution of histamine hydrochloride. Anthisan (mepyramine) reduced both the wheal and flare obtained with the scratch and intracutaneous techniques to a greater extent than did other antihistaminics.

Patch tests were performed in known sensitive patients and Antergan (0.1 gm. 6 times daily) was administered during the 48-hour test period. No change in the eczematous response was noted. Patch tests with addition of antihistamines to the test material gave inconclusive results. H.

Assay of Hyaluronidase in Various Dermatoses. Prose, P., and Baer, R.: J. Invest. Dermat. **16**: 169, 1951.

Hyaluronidase activity was determined by a viscosimetric method in skin biopsies of patients with allergic eczematous contact dermatitis. Neither the normal nor the diseased skin of these patients contained any detectable hyaluronidase. R. W.

Eczema. Cormia, F. E.: Canad. M. A. J. **64**: 293, 1951.

Many of the abnormal physiologic reactions which play a part in the etiology of eczema are discussed. Different pathologic reactions observed in biopsies taken from patients with eczematoid dermatitis are also reviewed but no attempt is made to correlate these various findings. R. W.

Tridione and Paradione Sensitivity. Forsey, R., and Black, R.: Canad. M. A. J. **64**: 120, 1951.

A case of sensitivity to Tridione, which manifested itself by severe skin lesions including urticaria, angio-edema, and generalized acne is described. The symptoms could be reproduced by re-administration of the drug. Paradione, a similar medicant, also produced an identical response, suggesting that the patient was highly sensitive to the basic compound present in each drug. R. W.

Local Cutaneous Sensitivity to Methapyrilene. Loveman, A. B., and Fliegelman, M. T.: Arch. Dermat. & Syph. **63**: 250, 1951.

A 64-year-old atopic man developed a weeping vesicular erythematous eruption involving the face, eyes, neck, ears, and forehead, twenty hours after applying a methapyrilene cream to his forehead. Methapyrilene ointment had previously been used for a dermatitis of the groin. Positive reactions were obtained by patch test with methapyrilene cream and methapyrilene ointment. Patch tests made with a 2 per cent methapyrilene solution yielded positive reactions, while those performed with the drug in a cream base were negative. Patch tests made with other antihistamine creams and ointments (phenindamine, diphenhydramine and tripelennamine) were negative at the end of 48, 72 and 96 hours. Attempts to produce a generalized eruption or flare-up of the local patch test reactions by the ingestion of methapyrilene and other antihistamine drugs failed. It is concluded that local cutaneous sensitivity to one antihistamine preparation does not imply sensitivity to others. C.

A Controlled Clinical Evaluation of Thephorin Ointment in the Relief of Pruritus. Baldridge, G. D.: Arch. Dermat. & Syph. **63**: 260, 1951.

The effect of Thephorin ointment upon pruritus in 41 patients with circumscribed neurodermatitis, atopic dermatitis, and miscellaneous pruritic dermatoses was studied. In 20 cases, bilateral involvement made it possible to apply the ointment containing 5 per cent phenindamine to lesions on one side of the body, while the ointment base alone was applied as a control to comparable lesions on the opposite side of the body. In 16 patients with unilateral lesions, the phenindamine and control ointments were alternated at weekly intervals without the knowledge of the patient. It was found that phenindamine, 5 per cent in carbowax 1500 or in a vanishing cream base, was neither more nor less effective in the relief of pruritus than the unmedicated base alone. C.

Dermatitis From Nail Lacquer Applied to Costume Jewelry. Parkhurst, H. J.: Arch. Dermat. & Syph. **63**: 264, 1951.

In 2 patients, dermatitis resulted from contact with nail lacquer which had been applied to costume jewelry worn on the ear lobes and around the neck. In both cases, the same lacquer had been used on the nails for some time previously without any skin irritation. The lesions cleared within a few days following the removal of the costume jewelry and nail lacquer. C.

A Combination of Tar and Antihistaminic for Local Use. Walters, J. D., and Gilman, R. I.: U. S. Armed Forces M. J. **2**: 187, 1951.

An ointment consisting of 5 per cent coal tar and 2 per cent antihistamine compound (pyranisamine maleate) in an hydrophilic base was used to treat 52 patients with various types of chronic pruritic dermatoses. Seventy-one per cent of the patients in the series experienced relief from the dermatoses and 75 per cent were relieved of pruritus. The combination of coal tar and antihistamine gave 20 per cent better results than an ointment containing only coal tar. F.

Studies in Cutaneous Adrenergic Blockage; An Application of Ion Transfer. Rodriquez, A. A., Last, J. H., Rostenberg, A., Jr., and Kendell, H. W.: Arch. Phys. Med. **31**: 442, 1950.

Dibenamine, a sympathetic nervous system blocking drug, which is toxic when administered parenterally is nontoxic when introduced into the skin by ion transfer. Dibenamine showed transient local adrenergic blocking activity.

Studies made with a new drug, SY-28, indicated that it possesses strong local adrenergic blocking activity. It was also found that this drug produced a high incidence of sensitization, a finding which definitely precludes its usefulness. J. S.

The Prevention of Ultraviolet Erythema by Topical Application of Pyribenzamine. Grynbaum, B. B., Bierman, W., and Kurtin, A.: Arch. Phys. Med. **31**: 587, 1950.

In a previous report, the authors have shown that Pyribenzamine, applied locally, prevented the erythema caused by ultraviolet radiation. A 10 per cent solution of the drug protected against 10 minimal erythema doses. In the present study, the protective influence was shown to be due to the physical absorption of the radiation by the solution of drug, rather than to any antihistaminic or other pharmacologic action. The application of a 10 per cent Benadryl solution failed to prevent the erythema produced by ultraviolet radiation. J. S.

Dermatitis From Local Anesthetics: With a Review of One Hundred and Seven Cases From the Literature. Lane, C. G., and Luikart, R.: J. A. M. A. **146**: 717, 1951.

Epidermal hypersensitivity to local anesthetics occurs frequently among the general population as well as among dentists and physicians. One hundred seven cases of contact dermatitis from local anesthetics were reviewed by the authors. Seventy-eight cases (73 per cent of the total) were confirmed by positive patch tests. The most common offender was procaine, followed in decreasing order of frequency by Orthoform, Butesin Picrate, Pontocaine, Nupercaine, Benzocaine, Butyn, and several others. The reaction may be local or generalized and is at first typically that of dermatitis venenata, but in long-standing cases the skin may become dry, fissured, scaly, and keratotic. The reaction is usually characterized by a period of development or delay of from 16 to 48 hours, but it may not appear for as long as 45 days after the application of a single patch test and may increase in severity for as long as 20 days after its appearance. Collateral sensitivity among this group of drugs, which are usually used in the treatment of pruritus is frequent. It is highly questionable whether these drugs afford any measurable relief from pruritus. Since they produce such a high incidence of sensitization, they should be prescribed with great caution. F.

Otorhinology and Ophthalmology

Localized Sensitivity of Eye to Penicillin. Egan, J. A.: Am. J. Ophth. **34**: 289, 1951.

A 50-year-old man with blepharoconjunctivitis was treated by the local application of penicillin ointment. Within 24 hours, there appeared a typical penicillin sensitivity reaction, involving the lids and conjunctiva of the left eye. There was no dermatitis per se. The patient denied previous treatment with penicillin. Two months later, he was given an intramuscular injection of 300,000 units of penicillin in oil for a severe respiratory infection. On the following day, a penicillin reaction identical to the first one and localized to the left eye appeared. The author regards the phenomenon as a manifestation of localized anaphylaxis with the localized area of sensitivity being reactivated by the introduction of the antigen at a distance. Patch tests were not done. C.

Topical Cortisone in the Treatment of Anterior-Segment Eye Disease. Steffenson, E. H., Wishbau, A. J., Nagle, F. O., Smith, R. W., and Whitney, E. L.: Am. J. Ophth. **34**: 341, 1951.

Twenty-four patients with anterior-segment eye disease were treated by the topical instillation of 1:4 cortisone in saline suspension. Marked improvement was noted in all cases of keratitis, iritis, and trophic corneal ulcer. Two cases of vernal conjunctivitis failed to respond objectively to cortisone therapy, although there was subjective relief during the first 2 days of treatment. C.

Local and Systemic Cortisone in Ocular Disease. Leopold, I. H., Purnell, J. E., Cannon, E. J., Steinmetz, C. G., and McDonald, P. R.: Am. J. Ophth. **34**: 361, 1951.

One hundred forty-two patients with a wide variety of ocular diseases were treated with cortisone administered by subconjunctival or retrobulbar injection, or instilled as eye drops. Seventy-six patients showed appreciable improvement. These patients were suffering from a number of conditions which were regarded as possible allergic states and included such illnesses as drug sensitivity, vernal conjunctivitis, episcleritis, marginal corneal ulcers, keratitis, and uveitis. One patient with recurrent nonspecific iritis, who was sensitive to atropine, scopolamine, and homatropine, could tolerate these drugs topically when cortisone was also present subconjunctivally. C.

Miscellaneous Allergies

Effect of Para-Aminobenzoic Acid in Serum Sickness. Ricci, G.: Acta Vitaminologica **4**: 241, 1950.

Thirty-nine infants and children with serum sickness following the administration of diphtheria antitoxin were studied. Thirty-four of these patients were treated with para-aminobenzoic acid administered orally or intramuscularly. From 6 to 18 Gm. were given for 1 or 2 days, after which time, the dose was reduced to from 3 to 9 Gm.

In the treated cases, clinical symptoms improved immediately after treatment was instituted and showed little tendency to return after 4 days of treatment. Symptoms in the 5 nontreated cases were more severe and persisted for a much longer period. H.

Mercuhydrin Sensitivity: Report of a Case. Fineman, A. H., and Rosenberg, S. J.: Ann. Allergy **8**: 80, 1950.

A case of mercuhydrin sensitivity in a 48-year-old woman with congestive heart failure and aortic disease is reported. The administration of mercuhydrin was followed by high spiking temperature, shaking, and chills. Upon withdrawal of the drug, after 11 days of therapy, the patient became afebrile. The time interval between subsequent courses of mercuhydrin and the appearance of symptoms was shortened to 3 days with the second course, and to 15 minutes with the third. With the first and second courses, mild desquamation of the skin was noted. Negative reactions were obtained to scratch, intracutaneous, and patch-scratch tests with mercuhydrin and related compounds. Negative results were also obtained with the Leftwich technique. E. W.

Skin Tests With Steroid Hormones in Allergic Diseases. Hajos, M. K.: Ann. Allergy **8**: 66, 1950.

A total of 91 allergic patients consisting of 79 females and 12 males were skin tested with steroid hormones in an olive oil vehicle according to the method of Zondek and Bromberg. Most of these patients had allergic manifestations which were closely related to the sexual cycle. The following positive reactions were elicited: with progesterone in 25 female and in 12 male patients; with testosterone in 8 females and 2 males; with adosterone in 7 females and 4 males; and with desoxycorticosterone in 6 females. Sixteen control subjects failed to show any positive reactions. Olive oil and cholesterine were used for control substances. Positive reactions were obtained twice with olive oil and once with cholesterine, without hormone sensitivity. E. W.

Loss of Protection by Vaccination Following Cortisone Treatment in Mice With Experimentally Induced Tuberculosis. Solotorovsky, M., Gregory, F. J., and Stoerk, H. C.: Proc. Soc. Exper. Biol. & Med. **76**: 286, 1951.

Three groups of mice were vaccinated with a heat-killed suspension of tubercle bacilli and 3 groups were left nonvaccinated. Two days later, all mice were injected intravenously with a virulent strain of tubercle bacillus. The survival time of the nonvaccinated group was 19.7 days, while that of the vaccinated group was 25 days. When one group of the vaccinated mice was treated with cortisone daily following the infection, the survival time was reduced to 20.5 days. Cortisone treatment of the nonvaccinated mice produced little change in survival time. Thus, cortisone nullified the advantage conferred by vaccination.

Another group of mice was infected with tubercle bacilli of low virulence. Half of this group was then treated with daily doses of cortisone. The median survival time for the infected controls was 40 days, while that of the cortisone-treated group was 24 days. The greater effect of cortisone on slowly progressive tuberculosis than on the rapidly progressive disease suggests that the hormone exerts its action by interfering with the immune response. B. S.

The Mechanism of Action of ACTH in Experimental Nephritis Due to Foreign Protein. Wedgewood, R. J., Hawn, C. V. Z., and Janeway, C. A.: Proc. Second Clinical ACTH Conference **1**: 108, Kingsport Press, Kingsport, Tenn., 1951, Blakiston Co.

It was observed that more severe glomerulonephritic lesions could be produced in rabbits by administering 2 injections of purified bovine serum gamma globulin 10 or 11 days apart than by giving a single injection. When ACTH was administered 5 days after the first dose of antigen, a "normal" amount of circulating antibody was produced, complement titers fell as usual at the time renal lesions ordinarily appear, but no renal lesions could be found on histologic section. Control experiments ruled out the possibility that ACTH itself was responsible for the fall in serum complement. It is suggested that, inasmuch as the interaction of antigen, antibody, and complement apparently was not inhibited, "the hormone in some way altered the capacity of the tissues to react to this usually irritating antigen-antibody combination." K.

Anaphylaxis

Inhibition of the Tuberculin Reaction by Cortisone in Vaccinated Guinea Pigs. Stoerk, H. C.: Federation Proc. **9**: 345, 1950.

Anaphylactic reactions in animals were not prevented by the administration of cortisone prior to the shocking injection. The Arthus reaction in

sensitized animals was reduced as to fluid exudation, but cellular infiltration and necrosis were not affected. In guinea pigs vaccination with heat-killed human tubercle bacilli, the tuberculin reaction could not be elicited when cortisone was given prior to the injection of old tuberculin. K.

The Experimental Production of Arteritis by Passive Sensitization. Cohen, S. G., Mayer, L. D., and Criep, L. H.: J. Immunol. **66**: 487, 1951.

Rabbits were passively sensitized with homologous antihorse serum and one-half hour later were challenged with repeated intravenous injections of small amounts of horse serum. The animals were sacrificed 24 hours later and the immediate pathological response was studied. All the animals were found to have extensive panarteriolar and periarteriolar reactions involving the pulmonary arteries and arterioles. Control animals that received homologous antihorse serum only, horse serum alone, or homologous antihorse serum plus an unrelated antigen did not show a similar response. The authors suggest that the production of arteritis in the passively sensitized animals by the use of relatively small challenging doses of antigen lends support to the theory that this reaction is based upon an antigen-antibody mechanism. R. W.

Pharmacology, Physiology, and Pathology

Studies on the Mechanism of the Shwartzman Phenomenon. Evidence for the Participation of Polymorphonuclear Leucocytes in the Phenomenon. Stetson, C. A., Jr., and Good, R. A.: J. Exper. Med. **93**: 49, 1951.

Rabbits injected with nitrogen mustard (methyl-bis [β-chloroethyl] amino hydrochloride) developed refractoriness to the Shwartzman phenomenon coincidentally with the disappearance of polymorphonuclear leucocytes from their blood stream. Shwartzman reactivity was not obliterated one day following the administration of nitrogen mustard, although lymphocytes were severely depressed at this time. The skin remained reactive until the third to fifth day when the granulocytes are depressed. When the femoral arteries of the rabbits were clamped off prior to the injection of nitrogen mustard in an ear vein, the femoral marrow was spared, leucocytes diminished relatively little and the Shwartzman reaction could be elicited. Histologic study revealed near absence of granulocytes from skin sites prepared with meningococcal filtrate in animals which had received nitrogen mustard and had pronounced leucopenia whereas nonleucopenic animals showed heavy infiltration of granulocytes in the Shwartzman prepared skin sites. The degree of aerobic glycolysis in Shwartzman prepared skin sites of nitrogen mustard treated animals was slightly elevated but was consistently higher than that for normal skin. However, the degree of aerobic glycolysis was much greater in the skins of nonleucopenic animals. Exudative leucocytes are known to have a high rate of aerobic glycolysis. When benzene was used as the leucopenic inducing agent with or without sulfapyridine to counteract the granulopenia, the results confirmed the above findings. Not a single animal having a polymorphonuclear blood count of 1200 cells or less developed a positive Shwartzman reaction while all animals having a count of 1500 or over were reactive. Almost complete absence of induration and erythema following the intracutaneous injection of meningococcal filtrate was a consistent finding in leucopenic animals. It is suggested that the erythema, edema, and induration normally seen may be the result of attraction of granulocytes to the prepared area with increased local aerobic glycolysis and release of the vasodilator, lactic acid. K.

Effect of Cortisone on Passively Induced Skin Hypersensitivity in Man. Stollerman, G. H., Rubin, S. J., and Plotz, C. M.: Proc. Soc. Exper. Biol. & Med. **76**: 261, 1951.

Reaginic sera were obtained from 2 patients treated with cortisone. One patient had severe serum sickness, the other had diffuse vascular disease and an incidental ragweed hypersensitivity. The recipients employed in these studies consisted of 14 individuals who were being treated with cortisone for a variety of illnesses and 6 who were not being treated with the hormone. In each recipient, 4 sites were passively sensitized with 1:5 or 1:10 dilutions of the donors' serum. These sites were tested 24 or 48 hours later with the appropriate antigen, antigen plus cortisone, antigen plus the cortisone vehicle, and cortisone alone. The positive reactions were passively transferred in the cortisone-treated recipients and in those not receiving the drug. The local addition of cortisone produced no change in the reaction in both groups. In 4 cases, there was no significant difference in the Prausnitz-Küstner reactions, of those volunteers tested, before and during treatment with cortisone. One of 3 volunteers treated with cortisone for 3 days showed a significant partial reversal of the tuberculin reaction. This same subject failed to show an inhibition of the Prausnitz-Küstner reaction. It is concluded that cortisone does not influence passively induced skin hypersensitivity in man. B. S.

Adrenocorticotropic Hormone (ACTH) Gross and Histologic Effects on Skin Tests and Passive Transfer. Zeller, M., Randolph, T. G., and Rollins, J. P.: Ann. Allergy **8**: 163, 1950.

Skin testing was performed by the scratch and intracutaneous techniques on 2 atopic patients before and after they received ACTH for 2 days. There was no difference in the size of the wheals or in the intensity of the reactions. When ACTH was mixed with allergenic extracts or with histamine, it also failed to alter the skin response obtained by testing with these substances alone. Biopsies taken from ragweed wheals raised prior to ACTH therapy revealed eosinophile infiltration and edema. After ACTH therapy, biopsies taken from such ragweed wheals showed either an absence of eosinophiles or a marked reduction in their number. There was, however, a marked increase of polymorphonuclear cells with a decrease in monocytes and lymphocytes. Histologic studies of passive transfer sites produced with pre- and post-ACTH treatment serum revealed the characteristic edema and eosinophilic infiltration. E. W.

Localization of Adrenocorticotropic Hormone by Histochemical and Immunological Methods. Marshall, J. M., Jr.: J. Exper. Med. **94**: 21, 1951.

Antiserum against ACTH was produced in adrenalectomized rabbits maintained on desoxycorticosterone and sodium chloride. The serum globulin obtained was conjugated with fluorescein. Precipitin tests were made with this conjugate or with normal globulin conjugate against a highly active ACTH preparation. Definite precipitation was observed with the antibody conjugate, but there was no precipitation with normal globulin conjugate at one hour. Protein determinations of the precipitate showed that roughly from 10 to 20 per cent of the ACTH preparation was precipitable by a presumed excess of antibody conjugate. Hormonal assays of residual ACTH confirmed the combination of antibody conjugate with ACTH. About 76 per cent of the original ACTH activity was destroyed by the addition of antibody. The addition of normal globulin destroyed 40 per cent of the hormone activity. It is suggested that "a rather large part of the hormone activity of this highly active ACTH preparation is associated with a relatively small fraction of

precipitable antigen." The purified antibody conjugate was used as a histochemical stain on frozen tissue sections and reacted selectively with cytoplasmic elements of the basophile cells of hog pituitary. No cells of sheep or beef pituitary or of hog kidney were stained and a fluorescent normal globulin solution gave no selective staining. It was concluded that the basophile cells of the pituitary, which also are believed to produce gonadotropic and thyrotropic hormone, contain ACTH. K.

The Effect of Antihistaminic Drugs Upon the Performance of Trained Rats. Winter, C. A., and Flataker, L.: J. Pharmacol. & Exper. Therap. **101**: 156, 1951.

Rats trained to climb a vertical rope were treated with Neoantergan, Pyribenzamine, Benadryl, Phenergan, Thephorin, or Diparcol, all of which reduced the rate of ability to climb. In the doses used, the behavior of the animals was normal except when they were called upon to perform the test. Curarized animals retained their training and attempted to climb without incoordination, but exhibited weakness. The antihistamine-treated animals showed hesitation, confusion, and incoordination, illustrating central nervous system depression. Amphetamine and caffeine counteracted the antihistamines whereas cocaine and picrotoxin added to the confusion and delay in climbing. Alcohol was without appreciable effect. Thephorin, unlike the other antihistamines, caused increased activity and excitement which were intensified by caffeine and amphetamine. Thephorin also potentiated depression induced by Phenergan, demonstrating that the mechanism of Thephorin central nervous stimulation differs from that of caffeine and amphetamine. K.

Influence of Cortisone and Related Steroids Upon Spreading Effect of Hyaluronidase. Winter, C. A., and Flataker, L.: Federation Proc. **9**: 137, 1950.

The area of spread of intracutaneously injected dye with or without added hyaluronidase was studied in mice and rats. Cortisone or adrenal cortical extract administered intramuscularly prior to this injection "strongly inhibits the spreading action of hyaluronidase." Adrenalcortical extract is also effective when administered intracutaneously mixed with the dye, whereas cortisone has no effect by this route. The following steroids inhibit the spreading factor when injected intramuscularly daily for 3 days prior to testing: cortisone acetate, testosterone proprionate, Δ 4-androstenetrione-3,17, and Δ 4-3,20-diketo-17-hydroxy-21-acetoxypregnene. Steroids which are ineffective are desoxycorticosterone acetate and Δ 4-androstenetrione-3,11,17. Evipal inhibits spreading factor to a marked degree temporarily but ether is without effect. K.

The Renal Hemodynamic Effects of Phenylephrine (Neosynephrine) Hydrochloride in Man. Crosley, A. P., Clark, J. K., and Barker, H. G.: J. Pharmacol. & Exper. Therap. **101**: 153, 1951.

Following the intramuscular or intravenous administration of from 3 to 5 mg. of Neosynephrine to 5 normotensive human beings, blood pressure increased and pulse rate decreased. Renal blood flow decreased significantly, but the glomerular filtration rate increased, indicating that the site of renal resistance is in the efferent arterioles. Similar effects have been reported following the administration of epinephrine, ephedrine, and paredrinol. K.

Behavior of the Normal Histamine of the Rabbit Toward Antihistaminic Substances. Farrerons-Co., F. J.: Ann. Allergy **8**: 95, 1950.

Twelve rabbits with a high initial histamine blood content received large doses of either Antistine or Benadryl intraperitoneally. Following the injection, the histamine content of the blood was again determined. In all except 4 animals, the histamine level remained unchanged. It was concluded that the mechanism of action of these drugs is not based on neutralization or destruction of histamine. E. W.

Adrenal Cortical Failure Following Treatment With Cortisone and ACTH. Procter, E. L., and Rawson, A. J.: Am. J. Clin. Path. **21**: 158, 1951.

A Negro woman, 36 years of age, with lupus erythematosus disseminata was treated with cortisone for one week. A few days later she was given 100 mg. a day for the next 13 days. The original response was good, but later she developed pneumonitis and a heart murmur. She was then given ACTH 12 mg. every 6 hours for 3 days. She developed a spiking fever despite antibiotic therapy, vomited, became stuporous, and died 11 days after discontinuance of ACTH. At autopsy, lesions of erythematosus were found, but the most striking feature was thinning of the zona fasciculata of the adrenal cortex with a microscopic picture of cellular death in this area. The cells of the zona glomerulosa were normal and this section appeared somewhat widened. Since specific adrenal lesions are not a recognized part of the lupus erythematosus picture, it was thought that this patient died as a result of the adrenal hormone medication. It is suggested that the disease-stressed adrenal cortex may have atrophied while Cortisone was administered and that the sudden discontinuance of Cortisone followed by ACTH stimulation resulted in a holocrine type of response with death of the adrenal cells. K.

Vitamin B_{12} and Histamine. Ducrot, R.: Compt. rend. Soc. de biol. **144**: 697, 1950.

Vitamin B_{12}, which is said to have an antihistaminic action, failed to exert any protective effect against histamine shock induced in guinea pigs by the inhalation of aerosolized histamine or by the intravenous injection of histamine. Vitamin B_{12} also failed to show antihistaminic properties in Dale experiments with isolated guinea pig intestine. H.

Temporary Accumulation of Eosinophilic Leucocytes in Spleen of Mice Following Administration of Cortisone. Spain, D. M., and Thalhimer, W.: Proc. Soc. Exper. Biol. & Med. **76**: 320, 1951.

Mice were injected with cortisone and sacrificed 8 hours later. The number of eosinophilic leucocytes found in the spleens of cortisone-treated animals averaged 9 times the number found in the spleens of the untreated controls. At the end of 8 hours, a marked drop occurred in the circulating eosinophiles of the treated mice. Animals sacrificed at 2, 4, and 6 hours after the hormone injection failed to show any significant increase in splenic eosinophilic leucocytes. Computations based on the size of the mouse spleen and the size and number of eosinophiles indicated that the number of eosinophilic leucocytes found in the spleen could account for the number that disappeared from the circulating blood following a single injection of cortisone. B. S.

Miscellaneous

The Nature of the Combining Sites of Antibodies. The Specific Protection of the Combining Site by Hapten During Iodination. Pressman, D., and Sternberger, L. A.: J. Immunol. **66**: 609, 1951.

Globulin fractions of antisera specific for P-azobenzoate and P-azobenzenearsonate were chemically combined with their homologous haptens prior to iodination and subsequent antigenic exposure. Control fractions of the antisera were iodinated before being exposed to the specific antigen. The results showed that the hapten antibody union protected the combining sites of antibodies against destruction during iodination. The authors suggest the use of this technique for further study concerning the physical chemistry of immunological reactions. R. W.

A Note on Persistence of Antibody Passively Transferred From Mother to Infant. Griffitts, J. J., and Nock, W. S.: Am. J. Clin. Path. **21**: 260, 1951.

In a case of erythroblastosis foetalis due to antibody for Rh factor, maternal antibody was demonstrable in the infant serum for 118 days after birth, despite the removal of 350 ml. of blood and replacement with 410 ml. of Group O Rh-negative blood by exchange transfusion technique shortly after birth. The infant was born at 7 months' gestation and weighed 4 pounds, 2 ounces. The original cord blood titer was 1:2048. Coomb's test was 4-plus on the day of delivery and weakly positive on the first and second days of life, becoming negative after this time. Saline agglutinations were negative, but suspension of cells in 20 to 30 per cent bovine albumin revealed agglutination, the titers receding steadily to zero over a 150-day period. K.

Motor Neuritis After Tetanus Antitoxin With Involvement of the Muscles of Respiration. Comroe, J. H., Wood, F. C., Kay, C. F., and Spoont, E. M.: Am. J. Med. **10**: 786, 1951.

A 28-year-old man, with a history of urticaria after an injection of tetanus antitoxin at the age of 10, was given another injection following an ankle injury. Six days later, he began to have severe steady pain in both shoulder regions and developed numbness down both forearms. On the eleventh postinjection day, heaviness of the chest and orthopnea appeared. There was some tenderness in the right deltoid and biceps areas and in the upper dorsal region. Weakness of the right deltoid and absence of reflexes in both arms soon developed. No sensory disturbances were noted. About one month after the injection, the pain had practically disappeared, but there was some residual atrophy of the right biceps and he complained of inability to breathe normally. When lying down, he became dyspneic and cyanotic. Physical findings at that time showed definite weakness of the muscles of respiration, particularly those concerned with inspiration. A gradual return to normal occurred over a period of two and one-half years. F.

Studies on Acute Disseminated Encephalomyelitis Produced Experimentally in Rhesus Monkeys. VI. Changes in the Cerebrospinal Fluid Proteins. Kabat, E. A., Wolf, A., Bezer, A. E., Murray, J. P.: J. Exper. Med. **93**: 615, 1951.

Monkeys were injected "with various emulsions with or without brain tissue plus the Freund adjuvants. . . ." Following immunization, cerebrospinal fluid was collected and analyzed by a quantitative immunochemical

technique for gamma$_2$ globulin. Total protein content of the cerebrospinal fluid as well as gamma$_2$ globulin and electrophoretic protein studies of the blood serum of the monkeys were carried out at the same time.

In the acute phase of development of acute disseminated encephalomyelitis, there was a rise in white cell count, total protein, and gamma globulin in the cerebrospinal fluid. Normal or low values were found in those animals which had few or small lesions. During the acute stage the proportion of gamma globulin to total protein was normal or elevated. As the lesions increased in size and became more acutely necrotizing, the protein increase was more pronounced and a rise in absolute gamma globulin was noted. When the acute phase subsided, total protein declined and the proportion of gamma globulin to total protein was frequently increased. With healing, even of large lesions, values tended to approach normal. The abnormality of cerebrospinal fluid findings paralleled the severity of the disease. The most marked changes in cerebrospinal fluid were found in a group of 44 monkeys which had gross signs of disseminated encephalomyelitis in contrast to those less severely affected.

Comparison of serum and cerebrospinal fluid values in 8 monkeys revealed that, in 2 animals free of encephalomyelitis and in 2 with this disease, there was a lower ratio of globulin to total protein in the cerebrospinal fluid than in the blood. In 4 animals with active disease, the proportion of globulin in the spinal fluid was elevated. It is considered probable that cerebrospinal fluid gamma globulin is formed within the central nervous system. The picture is compared with that found in human multiple sclerosis. K.

Results of Histoplasmin Skin Testing in Children From the St. Louis, Missouri, Area. Lynch, J. F., and Alpern, E. B.: J. Pediat. **38**: 51, 1951.

Intracutaneous histoplasmin skin tests were done on 500 successive unselected children admitted to the hospital. Fifteen per cent showed positive skin reactions. The subjects ranged in age from a few days to 15 years. The incidence of positive reactions increased rapidly with age up to 10 years. Males showed a higher incidence of positive reactions than did females. There was no significant difference in the white and colored groups. Among the positive histoplasmin skin reactors, 72 per cent had chronic disease, whereas only 27 per cent of a non-histoplasmin reacting control group had chronic disease. Seventy per cent of the positive reactors came from rural areas, whereas 80 per cent of the hospital admissions came from urban communities. X-ray studies of the chest were available in 18 of the histoplasmin-positive patients. Of these 78 per cent showed calcification either of lung parenchyma or of lymph glands. None of these patients had a positive tuberculin test. In the entire series, only one patient had positive reactions to both histoplasmin and to tuberculin skin tests. Since none of the patients observed had clinically active histoplasmosis, it was concluded that a positive histoplasmin skin test represents unrecognized subclinical infection, that it is due to cross reactions induced by other fungus infections, or that it is a nonspecific reaction. J. S.

The Role of Particle Size in Experimental Air-Borne Infection. Sonkin, L. S.: Am. J. Hyg. **53**: 337, 1951.

Air chamber studies were conducted with mice as subjects. As infecting organisms, Type I Pneumococcus or Streptococcus hemolyticus Group C suspended with glycerine were employed as aerosols over a varied particle size range. Particle size was much less important to the incidence of upper respiratory infection, judged by cervical adenitis, than to lung infections. Lower respiratory infections, following inhalation of Streptococci, were due chiefly to particles smaller than 1.8 microns in diameter. Mice were relatively resistant to infection with pneumococcus in aerosol form in all particle size ranges. K.

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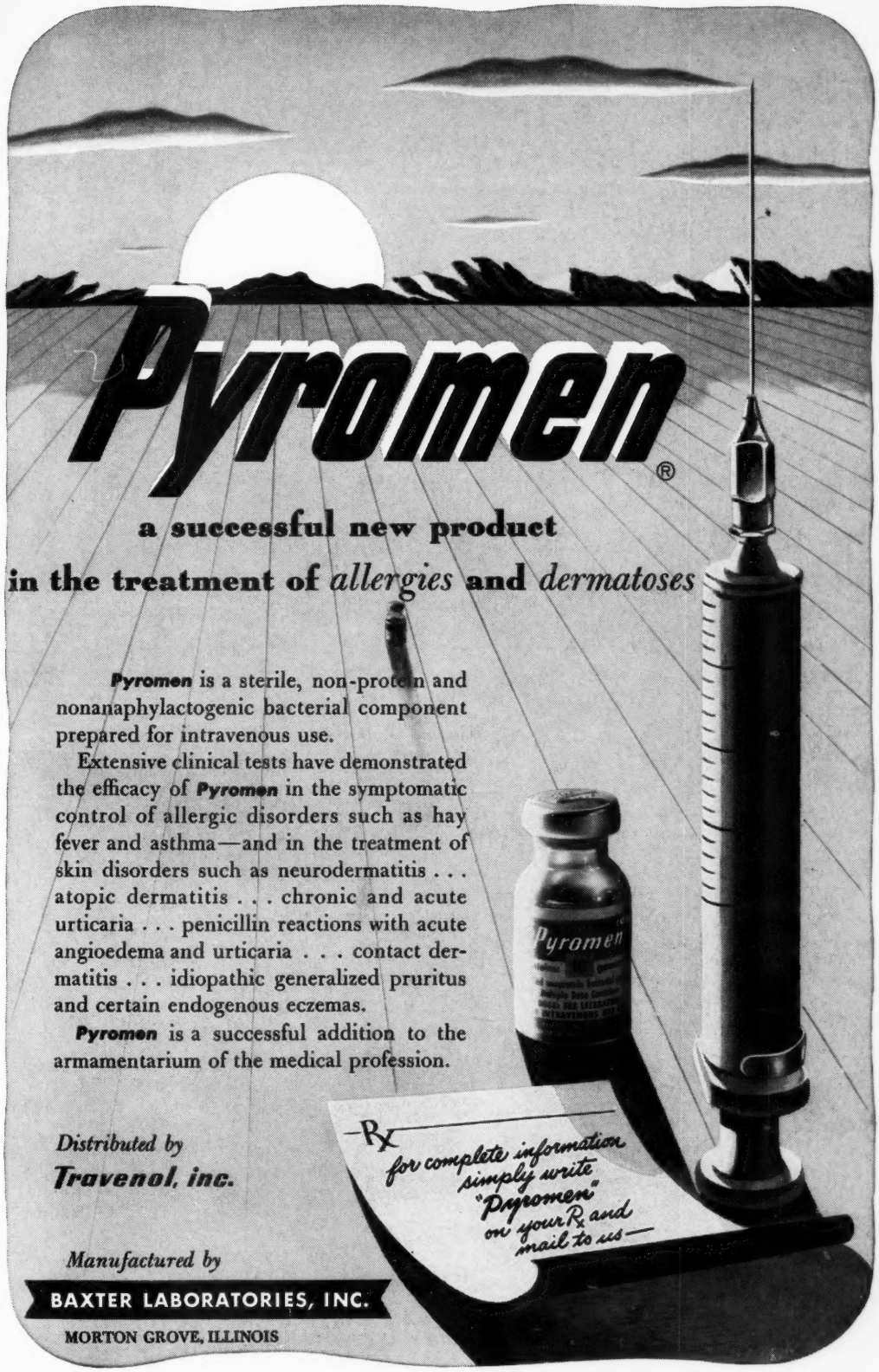
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THENFADIL, a new [illegible] has been shown in clinical trials to be highly effective in bronchial asthma, hay fever and urticaria. Thenfadil, (N,N-dimethyl-N'-(2-thenyl)-N'-(2-pyridyl) ethylenediamine hydrochloride) has been shown to be up to eight times more active against histamine reaction than several older antihistaminics. Clinically, Thenfadil produces excellent results in the common allergic disorders. It is comparatively well tolerated, side effects occurring in only 14 per cent of cases—mostly transient sedation.
Winthrop-Stearns Inc., New York 18, N. Y., Windsor, Ont.

℞ *available in tablets of 15 mg., bottles of 100. on prescription only*

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